

For Veterinary Use Only.

**Activate**[®]

Solution for Injection

Veterinary Mineral

COMPOSITION:

Activate Solution for Injection is a bluish, sterile solution for injection containing in each ml copper gluconate equivalent to 2.5 mg copper, 1.25 mg sodium selenite, manganese gluconate equivalent to 5 mg manganese, and zinc gluconate equivalent to 5 mg zinc.

PHARMACOLOGIC PROPERTIES:

Activate Solution for Injection is an organic mineral chelate combination prepared for meeting the trace mineral substance need of domestic animals in a balanced way, resolving deficiencies, treatment of metabolic diseases caused by such cases and providing mineral support for high productivity.

Copper, manganese, zinc and selenium trace elements contained in Activate Solution for Injection are critical co-enzymes required for activation of biologically important substances such as hormones, enzymes and other functional proteins. Any deficiency may cause specific or non-specific disorders in cell metabolism.

Zinc is an essential mineral for a healthy skin, fur and nail condition, reproductive functions, development of bones and cartilage, lipid and protein metabolism and enzymes and immune system. It has a vital role in DNA synthesis. Decrease in feed consumption, decrease in growth rate, regression in development, abnormal oestrus behavior, decrease in testicle size, disorders in spermatogenesis, and decrease in development of secondary genital organs and fertility, decrease in resistance against infections, obvious suppression in immunity response and pathological changes in skin and furs and parakeratosis are observed in animals with zinc insufficiency. Zinc plays a role in normal cell division, protein synthesis and genital functions by acting in enzymatic reactions. Zinc support contributes rapid recovery of wounds and development of immunity in animals. It is especially important to provide zinc support for reduction of disorders observed in feet and nails. Zinc in circulation is distributed through the whole body and found in high concentrations in muscles, hair, wool, male genital organ fluids and pancreatic secretion. Metabolized zinc salts are generally excreted through skin, nails and hair.

Selenium is found in the structure of glutathione peroxidase enzyme acting as a protector in cell structure and membranes. Such protection fails in case of selenium deficiency and primarily muscle fibers begin to lose their function. Half-life of selenium lasting 3 days of selenium spreading through the whole body approximately 2-4 hours after the injection may be increased to 8-10 days by repeated doses and it is substantially excreted from the body in urine.

Copper is an element that plays a role in several enzymatic activities of the organism as a coenzyme or activator. Its activation in energy and protein metabolism is important for formation of hemoglobin, keratin, melanin, cerebrocyte and bone matrices. Copper in circulation is retained by the liver and binds to certain tissue proteins. Most of the copper in plasma is in the form of an alpha-globulin oxidase known as ceruloplasmin. Reaching the highest plasma levels 4 hours after administration, copper is mostly intensified in livers of ruminants and excreted through bile.

Manganese is a trace element that is imperative for glycosyltransferase. This enzyme takes place in formation of

mucopolysaccharide chondroitin sulfate. Thus it plays a role in formation of cartilage tissue and therefore that of bone tissue. It also participates in the structure of manganese pyruvic carboxylase and of several enzymes as coenzyme.

AREA OF USE/INDICATIONS:

Activate Solution for Injection is used in disorders caused by deficiency of zinc, copper, selenium and manganese in cattle, calves, sheep, lambs, goats, years horses and foals. It is used in prevention of deaths and aborts in deficiency or lack of active substances in formulation, difficulty in offspring retention and for increasing offspring retention rates, and for achieving normal development of the brood during pregnancy in females, and in sterility cases in males. It is also used in transformation stress disease seen frequently in animals and several stress conditions, reinforcement of immune system, treatment of myosis cases, treatment of myoglobinemia and myoglobinuria, treatment of paralytic myoglobinuria (azoturia) disease, in weakness cases and recovery phases of diseases, and in development disorders seen in young animals as well as physical reinforcement of work and sport animals.

USAGE AND DOSAGE:

Unless recommended otherwise by veterinary surgeon, Activate Solution for Injection is administered intramuscularly through neck area in cattle, and intramuscularly or subcutaneously through neck area in sheep and goats. Treatment dose of Activate Solution For Injection is 1 ml per 20 kg live weight in copper, zinc, selenium and manganese deficiencies. It is recommended to use Activate Solution For Injection for protection purposes in the periods and doses given in the table below:

Animal Species	Protective Dose (ml)
In cows (3-4 weeks before parturition)	12-16
In cows (3-4 weeks before insemination)	12-16
In cows (in the 5th month of lactation)	12-16
In fattening female calf (3-4 weeks before fattening begins)	4-8
In bulls (3 doses per year)	12-16
In calves (at 2 days of age and at the time of weaning)	1-2
In sheep and goats (3-4 weeks before parturition)	2-4
In lambs and years (at 2 days of age and at the time of weaning)	0.5-1
In horses	10-15
In foals	2-5

SPECIFIC CLINICAL PARTICULARS / WARNINGS FOR TARGET SPECIES:

Due to hypersensitivity to selenium, a few lambs should be subjected to preliminary tests and general herd administration should be carried out according to the results obtained from the observation. It should be used in half-dose in sensitive animals. Dose should be repeated after 2 days.

Use during pregnancy: It is safe to use during pregnancy.

UNDESIRE/SIDE EFFECTS

Rarely hypersensitivity reactions may be observed in cattle. Symptomatic treatment should be administered in this case. Temporary irritation and swelling may occur on injection area. This swelling recovers spontaneously in 1-2 days. It is necessary to comply with standard aseptic conditions while administering the drug.

DRUG INTERACTIONS:

Giving sulfur increases clinic symptoms of selenium deficiency. It should not be used in combination with other drugs within the same syringe.

SYMPTOMS OF OVERDOSE, PRECAUTIONS AND ANTIDOTE:

Accidental administration of 8-10 times or more of the recommended dose may cause intoxication. Increase in respiration speed, difficulty in respiration, tachycardia, diarrhea, behavioral disorders and collapse may be observed when administered in too much higher doses than recommended or rarely in sensitive animals. There is no specific antidote. Treatment is carried out according to symptoms. The most sensitive animal species to copper is sheep. Chronic copper poisoning may occur in sheep in regions having a soil incorporating copper of high amounts. It may cause deterioration of red blood cells, jaundice, hepatic necrosis and renal insufficiency in animals.

WARNINGS FOR DRUG RESIDUES IN FOOD:

Withholding Period (WHP): It is zero (0) days for meat and milk during treatment and after the final drug administration.

GENERAL WARNINGS:

Consult your veterinary surgeon before using and in case an unexpected effect is observed. Keep out of reach of children and away from food products. Do not purchase and use products with expired shelf life and damaged packages.

STORAGE CONDITIONS AND SHELF LIFE:

Store in its package in room temperature below 25 °C (15 -25 °C). Shelf life is 2 years from production date.

COMMERCIAL PRESENTATION FORM:

It is offered for market in cardboard boxes containing colorless glass vials of 20, 50, and 100 ml.

PLACE AND CONDITIONS OF SALE:

Sold with Veterinary Surgeon's prescription in pharmacies and veterinary surgeries (VPS).

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